In the Drawings:

Please replace the original single sheet of drawing with the enclosed one Replacement Sheet, and please add the enclosed New Sheet. In the Replacement Sheet, the figure has been labeled as "FIG. 1", the housing 6 has been provided with shading as transparent material, and the transparent shading of the layers 1a and 1b has been removed, in conformance with the disclosure at page 4 lines 8 to 13. The New Sheet bears a new FIG. 2 showing a lens 9 according to original claim 11 and a detection unit 10 according to new claim 27. Approval and entry of the Replacement Sheet and the New Sheet are respectfully requested.

[RESPONSE CONTINUES ON NEXT PAGE]

REMARKS:

1) The Examiner's attention is directed to the accompanying Information Disclosure Statement. Please consider the references, and return an initialed, signed and dated acknowledgment copy of the IDS Form PTO-1449 of August 17, 2007.

2) The Examiner's attention is directed to the enclosed Drawing Transmittal with one Replacement Sheet and one New Sheet of drawings. Also see the above drawing amendment section of this Response. Approval and entry of the Replacement Sheet and New Sheet are respectfully requested.

3) The specification of this US application was originally filed in the German language, and then a direct literal English translation thereof was filed. The translated text has now been amended in an editorial and formal manner, to better comply with typical US application style and format, to clarify a few translated text passages, and to update the text to account for the drawing amendment (added Fig. 2). These merely editorial and formal changes do not introduce any new matter. Entry thereof is respectfully requested.

4) The original translated claims 1 to 11 have been canceled. New claims 12 to 29 have been introduced. Independent claim 12 is based on the subject matter of original claim 1 with additional features disclosed in Fig. 1 and the specification at page 6 lines 8 to 14. But claim 12 has been drafted in a somewhat

different style and format in comparison to the original translated claim 1, as a fresh approach at covering inventive subject matter. The new claims 12 to 29 are supported by the original disclosure (claims, figures, and specification) as shown in the following table, and do not introduce any new matter. An error in original translated claim 9 has been corrected in the corresponding new claim 20 (changing "impermeable" to --permeable--) as supported in the specification at page 4 lines 12 and 13. Entry and consideration of the new claims are respectfully requested.

new claims	12	13	14	15	16	17	18	19
original support	cl 1; Fig.1; p 6 l 8-14	cl 2	cl 3	cl 4	cl 5	cl 6	cl 7	cl 8

new claims	20	21	22	23	24	25
original support	cl 9 p 4 l 12-13	cl 9	cl 10	cl 10	Fig. 1 p 4 l 17-20	cl 11

new claims	26	27	28	29
original support	p 3 l 9-12	p 6 l 11-14	Fig. 1; cl 1,2,3,4,6,7	p 3 l 9-12

5) Referring to page 2 of the Office Action, the objection to the specification has been taken into account in the present amendment. Typical section headings have been added. Please withdraw the objection.

6) Referring to the top of page 3 of the Office Action, the title of the invention has been amended as suggested by the Examiner. Please withdraw the objection to the title.

7) Referring to the middle of page 3 of the Office Action, the objection to claims 1 to 11 has been obviated by the cancellation of claims 1 to 11. The new claims 12 to 29 avoid the informalities noted by the Examiner.

8) Referring to pages 3 and 4 of the Office Action, the rejection of claims 1, 9 and 10 as indefinite under 35 USC § 112(2) has been obviated by the cancellation of those claims. The new claims 12 to 29 avoid the indefinite aspects asserted by the Examiner. Please withdraw the indefiniteness rejection.

9) Referring to section 2 on pages 5 and 6 of the Office Action, the rejection of claims 1 to 4, 10 and 11 as anticipated by US Patent 4,752,799 (Stauffer) has been obviated by the cancellation of those claims. This rejection will be discussed in comparison to the new claims 12 to 29.

New independent claim 12 is directed to a sensor arrangement as a part of a reflection light barrier, whereby the sensor arrangement includes a carrier, a photodiode and two light emitting diodes arranged on the carrier, and a light permeable housing arranged to enclose the photodiode and the two light emitting diodes. The first light emitting diode is adapted to emit a pulsed measuring light beam. The second light emitting diode is adapted to emit a reference light beam. The second

light emitting diode is arranged on the carrier and in the housing such that its emitted reference light beam will be reflected internally by a surface of the housing to be incident onto an upper surface of the photodiode. This feature of new claim 12 is supported by the original disclosure of Fig. 1 and page 6 lines 8 to 14. This relative arrangement of the second light emitting diode, the carrier and the housing patentably distinguishes claim 12 from the prior art, as follows.

Stauffer discloses an optical sensor arrangement including two light emitting diodes (426, 444) that are arranged in a housing such that the light emitted from both of the diodes will exit the housing through an aperture (404) into the external environment, where the light is then reflected from an external object (434), and then the reflected light returns to an optical detector (480) of the optical sensor arrangement. Both light emitting diodes, the housing, and the carrier are arranged so that none of the light from either of the light emitting diodes could be reflected from the housing to be incident onto the optical detector. To the contrary, all of the light exits the arrangement to be reflected from the external object (434), and only then can return to the optical detector (480).

Stauffer does not disclose the second light emitting diode being arranged on the carrier and in the housing such that its emitted light beam will be reflected internally by a surface of the housing to return incident onto an upper surface of the optical detector. Thus, Stauffer does not anticipate the invention of present claim 12.

Also, Stauffer would not have provided any suggestion or apparent reason to modify the disclosed arrangement in such a manner so as to arrive at the different arrangement recited in present claim 12. Namely, Stauffer would have given no apparent reason to arrange a second light emitting diode on the carrier and in the housing in such a manner that its emitted light beam will be reflected internally by a surface of the housing so as to return incident onto an upper surface of a photodiode. To the contrary, Stauffer clearly and expressly describes that the emitted light energy from both light emitting diodes shall illuminate a portion of the remote surface of the external object (col. 1 line 64 to col. 2 line 9; col. 10 line 45 to col. 11 line 42). In fact, Stauffer expressly requires such reflection of both light beams from the external object in order to carry out the intended detection of the phase angle of the sum of both reflections, so as to determine the range of the external object from this detected phase angle (see the above text citations). Thus, a person of ordinary skill in the art would have been motivated directly away from the inventive arrangement in which the second light emitting diode is arranged relative to the carrier and the housing such that its emitted light beam will be reflected internally by a surface of the housing back onto an upper surface of the photodiode. For these reasons, the invention of claim 12 also would not have been obvious over Stauffer.

Regarding the subject matter of original claim 10, new claim 24 further makes clear that the chamfered wall extends at a declination angle selected such that the reference light beam

emitted by the second light emitting diode will be reflected from the chamfered wall toward the photodiode. The chamfered edges of the aperture (404) according to Stauffer are not angled in such a manner, but rather are angled outwardly away from the housing and could not reflect an emitted light beam inwardly back toward the photodetector.

The other dependent claims recite additional features that further distinguish the invention over the prior art, but are already patentable in view of their dependence from claim 12.

For the above reasons, the Examiner is respectfully requested to withdraw the anticipation rejection applying Stauffer.

10) Referring to section 4 on pages 6 and 7 of the Office Action, the rejection of claims 5 to 7 as obvious over Stauffer in view of US Patent 5,806,965 (Deese) has been obviated by the cancellation of those claims. This rejection will be discussed in connection with the new claims 12 to 29.

Independent claim 12 has been discussed above in comparison to Stauffer. That discussion pertains here as well.

Deese has additionally been cited as disclosing a light emitting diode arrangement with a circuit board in the manner of a sandwich board provided as a carrier. However, Deese provides no further suggestions toward the significant distinguishing feature of new independent claim 12 as discussed above. Namely, Deese does not disclose or suggest anything about the relative arrangement of a second light emitting diode, a carrier, a housing, and a photodiode, such that the light beam emitted by

the second light emitting diode will be reflected internally by a surface of the housing to return incident onto an upper surface of the photodiode. Since Deese discloses nothing in this regard, even a combination of the teachings of Deese with Stauffer would not have provided any suggestions toward such a relative arrangement of a light emitting diode, a carrier, a housing, and a photodiode. As discussed above, the teachings of Stauffer are contrary to the present invention, and Deese would have suggested nothing to modify such contrary teachings of Stauffer.

New claims 16 to 18 based on the subject matter of original claims 5 to 7 are patentable over the prior art already due to their dependence from claim 12.

For the above reasons, the Examiner is respectfully requested to withdraw the obviousness rejection applying Stauffer in view of Deese.

11) Referring to section 5 on page 7 of the Office Action, the rejection of claim 8 as obvious over Stauffer in view of US Patent Application Publication US 2003/0020004 (Reime) has been obviated by the cancellation of that claim. This rejection will be discussed in connection with the new claims 12 to 29.

Independent claim 12 has been discussed above in comparison to Stauffer. That discussion pertains here as well.

The Examiner has additionally cited Reime as disclosing a carrier consisting of a material impermeable to light. Nonetheless, such a feature does not address the important distinguishing features of new independent claim 12 as discussed above.

Reime discloses an optoelectronic switch, which can detect a finger pressing on a glass plate, for example. The device includes two light emitters and a light receiver, whereby the emitters emit light that is then reflected from the glass plate and/or the finger as an external object (see Figs. 1, 2a, 10, 11, and paragraphs 0043, 0044, 0084 to 0086). The glass plate is displaced away from the device itself (see Fig. 10) or can even be omitted with the sensor arrangement being open (see Fig. 11 and paragraph 0086). In the embodiment of Fig. 11, there is an additional reflector or shading element (160) that reflects the light emitted by the second light emitting element (3) back to the light receiving element (2) (see Fig. 11 and paragraphs 0043 and 0085). Thus, none of these embodiments involve an arrangement of a light permeable housing that encloses the photodiode and the two light emitting diodes, and furthermore the second light emitting diode being arranged relative to the carrier, the housing, and the photodiode such that its emitted light beam will be reflected internally by a surface of this housing to be returned incident onto an upper surface of the photodiode. It is significant that the device according to Reime does not include such an internally reflective housing, and the glass plate is simply an external object in the operating field of the device (see the fourth paragraph of claim 1 and claims 7 to 10 of the reference). Thus, even a combined consideration of the teachings of Reime in this regard with Stauffer would not have suggested the present invention of claim 12.

The dependent claims are patentable already due to their dependence from claim 12.

For these reasons, please withdraw the obviousness rejection applying Stauffer in view of Reime.

12) Referring to section 6 on pages 7 and 8 of the Office Action, the rejection of claim 9 as obvious over Stauffer in view of US Patent 5,486,946 (Jachimowicz et al.) has been obviated by the cancellation of that claim. This rejection will be discussed in comparison to the new claims 12 to 29.

Independent claim 12 has been discussed above in comparison to Stauffer. That discussion is pertinent here as well.

Jachimowicz et al. have been further cited for disclosing a housing formed of an encapsulant material that is **impermeable** to light. Unfortunately, the word "**impermeable**" in original claim 9 was a translation error, that should actually have read --**permeable**--. Thus, according to the actual present invention, the encapsulant material forming the housing is **permeable** to light. See present new claim 20 and page 4 line 12. Thus, the present invention is directly contrary to these teachings of Jachimowicz et al.

Also, while Jachimowicz et al. discloses reflections within a housing, there is no measuring light beam emitted out of the device, so that the teachings of Jachimowicz et al. would not have suggested or even applied to a sensor arrangement as part of a reflection light barrier according to the present invention of claim 12.

The dependent claims are patentable already in view of their dependence from claim 12.

For these reasons, the Examiner is respectfully requested to withdraw the obviousness rejection applying Stauffer in view of Jachimowicz et al.

13) The additional prior art made of record requires no particular comments because it has not been applied against the claims.

14) Favorable reconsideration and allowance of the application, including all present claims 12 to 29, are respectfully requested.

Respectfully submitted,
Manuel SCHMIDT et al.
Applicant

By _____
Walter F. Fasse
Patent Attorney
Reg. No.: 36132
Tel. 207-862-4671
Fax. 207-862-4681
P. O. Box 726
Hampden, ME 04444-0726

WFF:he/4674
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_____ 8/17/07
Name: Walter F. Fasse - Date: August 17, 2007